Richard J. Berry, Mayor

Environmental Health Department
Air Quality Program
Regulatory Review

Mary Lou Leonard, Director

To: Permit File, Enforcement File

From: Isreal Tavarez, Environmental Health Manager

Date: January 4, 2017

Subject: Permit application #3255-M1 and **CDS #NM/001/00141**

Location: UNM Economics Building (Building #57)
1915 Roma Ave NE
Albuquerque, NM 87131
13S UTM 352255 E, 3883811 N

Proposal: An application was received by the Department from The University of New Mexico for the UNM Economics Building (Building #57) located at 1915 Roma Ave NE, Albuquerque, NM 87131 on October 12, 2016. The application was for the construction of one (1) 69 hp/40 kW diesel-fired emergency generator which will be used to provide backup power in case the public utility power is interrupted. This generator will be replacing an older model emergency generator that was issued a Registration Certificate on April 13, 2016.

Applicability: ***Source Registration, 20.11.40 NMAC***
Any source which emits more than 2000 lbs of any air contaminant per year must obtain a Registration Certificate from the Department.

Authority-to-Construct, 20.11.41 NMAC
20.11.41.2.C(1) – Applicable as the applicant will be installing equipment which is subject to 20.11.63 NMAC, *New Source Performance Standards for Stationary Sources*.

Permit Fees, 20.11.2 NMAC
The review fees and annual fees below were adjusted for the Consumer Price Index on January 1, 2016.

20.11.2.18.C(1) – Proposed sources with a proposed allowable emission rate equal to or greater than one tone per year and less than five tons per year: $816.00
20.11.2.18.D(1) – Review fee for 40 CFR 60 standards: $1,088.00
The $1,904.00 review fee was paid on 10/24/2016

Annual emissions fee:
20.11.2.21.E(1) – Annual emission fees for specific source categories, emergency generators: $335.00 per year or $48.00 per ton, whichever is greater. The annual emission fees are estimated to be $335.00 per year.

Emission Unit #	CO TPY	NOx TPY	VOC TPY	SO2 TPY	TSP TPY
1	0.056	0.051	0.0027	0.014	0.0046
Total = 0 tpy	**0**	**0**	**0**	**0**	**0**

Visible Air Contaminants, 20.11.5 NMAC
20.11.5.13.C – Diesel-Powered Engine: No person shall cause or allow visible emissions from any stationary diesel-powered engine to exceed 20 percent opacity, 6 minute time-averaged. During the first 20 minutes of cold startup the visible emissions shall not exceed 40 percent opacity, 6 minute time-averaged. Additionally, no increase of load shall be applied so as to cause an emission having an opacity greater than 40 percent during any time interval.

Source Surveillance; Administration and Enforcement, 20.11.90 NMAC
20.11.90.13.A – The owner or operator of any stationary source of an air contaminant shall, upon notification by the Director, maintain records of the nature and amounts of emissions, to which an air quality control emission regulation applies, from the source and any other information as may be deemed necessary by the Director to determine whether the source is in compliance with applicable regulations.

20.11.90.13.E – The Director shall establish a periodic visual surveillance system to detect and investigate apparent violations of visible emission limitations and such complaints relating to apparent violations of the regulations as may occur.

20.11.90.14.A – Upon request of the Director, the person responsible for the emission of air contaminants for which limits are established by the 20 NMAC 11 rules shall provide such facilities, utilities, and openings exclusive of instrument and sensing devices, as may be necessary for the proper determination of the nature, extent, quantity and degree of such air contaminants. Such facilities may be either temporary or permanent at the discretion of the person responsible for their provisions; and shall be suitable for determination consistent with emission limits established in these Parts.

Public Notice: Public notice for this permit was from November 13, 2016 through December 13, 2016. No comments were received during the public comment period.

Compliance: The following permit conditions apply:

1) Unit #1 shall be restricted to a maximum of 200 hours of operation based on a 12-month rolling total, and shall only be operated during loss of commercial power and as required by the manufacturer for engine exercising/maintenance including 50 hours per year in non-emergency situations which meet the requirements of 40 CFR Subpart IIII §60.4211(f). Pursuant to 40 CFR 60 Subpart IIII §60.4211(f), Unit #1 shall be limited to 100 hours per year of maintenance checks and readiness testing. Unit #1 may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for the facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. Routine or non-emergency operation of the unit or operation for any other purposes, except as stated above, shall be a violation of this permit.

2) The permittee shall meet the diesel fuel requirements as required by 40 CFR 60 Subpart IIII §60.4207(b).

3) The permittee shall operate and maintain Unit #1 according to the manufacturer's written instructions, or procedures developed by the permittee that have been approved by the manufacturer. In addition, the permittee may only change those settings that are allowed by the manufacturer. The permittee must also meet the requirements of 40 CFR Part 89, 94, and/or 1068 as they apply. This condition is pursuant to 40 CFR 60 Subpart IIII §60.4211.

4) In accordance with 40 CFR 63 Subpart ZZZZ §63.6590(c), an affected source that is a new or reconstructed stationary RICE located at an area source "must meet the requirements of this part by meeting the requirements of 40 CFR 60 Subpart IIII, for compression ignition engines." The permittee shall comply with the specific requirements of Subpart IIII applicable to new stationary compression ignition internal combustion engines meeting the definition of a new engine.

5) In accordance with 40 CFR 60 Subpart IIII §60.4205(b), owner and operators of 2007 model year and later emergency stationary diesel-powered engines with a displacement of less than 30 liters per cylinder that are not fire engines must comply with the emission standards for new nonroad diesel engines in §60.4201, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary diesel engine. Unit #1 shall comply with the emission standards in 40 CFR 89.112(a) for the maximum permitted engine power or the pound per hour (lb/hr) and opacity emission limits as specified in Condition 2(a).

6) For Unit #1, compliance with CO, NOx + NMHC, TSP, PM10, and PM2.5 lb/hr emission limits shall be shown by meeting the requirements of 40 CFR 60 Subpart IIII §60.4211(c).

7) Unit #1 shall not cause or allow visible air emissions from any stationary diesel powered engine to exceed 20 percent opacity for any six (6) minute timed average. During the first twenty (20) minutes of cold start up, the visible emissions shall not exceed 40 percent opacity for any six (6) MINUTE TIMED AVERAGE. No increase of load shall be applied so as to cause an emission having an opacity greater than 40 percent during any time interval. This condition is pursuant to 20.11.5.13.C NMAC.

8) Maintain an accurate monthly log for Unit #1 hours of operation, both as a monthly total and as a 12-month rolling total.

9) Install a non-resettable hour meter prior to the startup of Unit #1. This condition is pursuant to 40 CFR 60 Subpart IIII §60.4209(a).

10) Inform the Department of all information labeled "TBD" cited under Condition 1(a), within thirty (30) days of installation.

11) An annual (January 1 through December 31 of the previous year) emissions inventory to include the annual hours of operation for Unit #1 together with descriptions of any reconfiguration of process technology and air pollution equipment by March 15 every year. The emissions inventory shall be calculated based on each individual pollutant's permitted pound per hour rate and reported for the actual hours of operation. **The combined NMHC+NO_X emission standard shall be reported as individual emissions. The emission rate for NO_X is 0.51 lb/hr and NMHC is 0.027 lb/hr.** Emission rates that are determined through compliance testing shall be used for all emission inventory reporting requirements (20.11.41.21.B NMAC).

Actions Taken:

- Application received by the Department on October 12, 2016.
- Application deemed complete by the Department on November 10, 2016.
- Public Comment period was from November 13, 2016 through December 13, 2016. No comments were received.

Process Equipment Table

Unit Number	Unit Description	Manufacturer	Model Number	Serial Number	Date of Manufacture	Date of Equipment Installation	Rated Process Rate	Unit Subject To NSPS
1	Diesel-Fired Engine	Caterpillar	C4.4	TBD*	TBD*	TBD*	69 hp	Yes
	Generator	Caterpillar	C4.4	TBD*	TBD*	TBD*	40 kW	No

Table A
Uncontrolled Emissions
Diesel-Fired Emergency Generator
69 hp

Emission factors for CO, NOx + NMHC, SOx, and PM were obtained from the NSPS IIII limit from the AEHD Air Quality Programs 20.11.41 NMAC Air Quality Application for Emergency Diesel Engines emission factor table (greater than or equal to 50 hp and less than 100 hp, model year 2008+). For the individual NOx and NMHC emission factors, the assumption of 95% NOx/5% NMHC per the California Air Resources Board policy was utilized. The uncontrolled emissions are based on 8,760 hours of operation annually.

Unit Number	Pollutant	Emission Rate	Emission Calculation	Emission lbs/hour each	Emission tons/year each
1	CO	3.70 g/hp*hr	(3.70 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.56 lb/hr (0.56 lb/hr) (8760 hr/yr) (1ton/2000 lbs) = 2.47 tpy	0.56	2.47
1	NO_x + NMHC	3.50 g/hp*hr	(3.50 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.53 lb/hr (0.53 lb/hr) (8760 hr/yr) (1ton/2000 lbs) = 2.33 tpy	0.53	2.33
1	NO_x	3.33 g/hp*hr	(3.33 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.51 lb/hr (0.51 lb/hr) (8760 hr/yr) (1ton/2000 lbs) = 2.22 tpy	0.51	2.22
1	SO_2	0.93 g/hp*hr	(0.93 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.14 lb/hr (0.14 lb/hr) (8760 hr/yr) (1ton/2000 lbs) = 0.62 tpy	0.14	0.62
1	TSP, PM10, PM2.5	0.30 g/hp*hr	(0.30 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.046 lb/hr (0.046 lb/hr) (8760 hr/yr) (1ton/2000 lbs) = 0.20 tpy	0.046	0.20
1	NMHC	0.18 g/hp*hr	(0.18 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.027 lb/hr (0.027 lb/hr) (8760 hr/yr) (1ton/2000 lbs) = 0.12 tpy	0.027	0.12

Table B
Controlled Emissions
Diesel-Fired Emergency Generator
69 hp

Emission factors for CO, NOx + NMHC, SOx, and PM were obtained from the NSPS IIII limit from the AEHD Air Quality Programs 20.11.41 NMAC Air Quality Application for Emergency Diesel Engines emission factor table (greater than or equal to 50 hp and less than 100 hp, model year 2008+). For the individual NOx and NMHC emission factors, the assumption of 95% NOx/5% NMHC per the California Air Resources Board policy was utilized. The controlled emissions are based on 200 hours of operation annually.

Unit Number	Pollutant	Emission Rate	Emission Calculation	Emission lbs/hour each	Emission tons/year each
1	CO	3.70 g/hp*hr	(3.70 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.56 lb/hr (0.56 lb/hr) (200 hr/yr) (1ton/2000 lbs) = 0.056 tpy	0.56	0.056
1	NO_x + NMHC	3.50 g/hp*hr	(3.50 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.53 lb/hr (0.53 lb/hr) (200 hr/yr) (1ton/2000 lbs) = 0.053 tpy	0.53	0.053
1	NO_x	3.33 g/hp*hr	(3.33 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.51 lb/hr (0.51 lb/hr) (200 hr/yr) (1ton/2000 lbs) = 0.051 tpy	0.51	0.051
1	SO_2	0.93 g/hp*hr	(0.93 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.14 lb/hr (0.14 lb/hr) (200 hr/yr) (1ton/2000 lbs) = 0.014 tpy	0.14	0.014
1	TSP, PM10, PM2.5	0.30 g/hp*hr	(0.30 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.046 lb/hr (0.046 lb/hr) (200 hr/yr) (1ton/2000 lbs) = 0.0046 tpy	0.046	0.0046
1	NMHC	0.18 g/hp*hr	(0.18 g/hp*hr) (1 lb/453.592 g) (69 hp) = 0.027 lb/hr (0.027 lb/hr) (200 hr/yr) (1ton/2000 lbs) = 0.0027 tpy	0.027	0.0027

Table C
Comparison of 40 CFR 60 Subpart IIII Limits, Requested Emission Rate, and Permitted Emission Limits

Pollutant	40 CFR 60 Subpart IIII Limit (40 CFR 89.112)	Manufacturer Data	Requested Emission Rate	Permitted Emission Limits	Permitted Emission Limits In Compliance with NSPS
	g/hp*hr	g/hp*hr	g/hp*hr	g/hp*hr	
CO	3.70	0.76	3.70	3.70	Yes
NOx + NMHC	3.50	3.30	3.50	3.50	Yes
PM	0.30	0.19	0.30	0.30	Yes